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Case report

Cecal ameboma in nasopharyngeal carcinoma patient mimicking intra-abdominal malignancy

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ABSTRACT

Amebiasis is quite uncommon in developed countries. Its clinical presentation can vary from an asymptomatic carrier state to fulminant colitis and colonic perforation. We presented a 39-year-old female who received combined chemotherapy and radiotherapy for nasopharyngeal carcinoma 1 year prior to admission. Thereafter, she felt acute abdominal pain and diarrhea after traveling to Hainan 3 months ago. A physical examination of the patient revealed diffused peritoneal sign. Abdominal computed tomography showed a cecal tumor and intra-abdominal abscess. A subsequent exploratory laparotomy revealed an infiltrating yellowish tumor about 7 cm over the cecum and massive serous ascites. Pathology reported ambeic colitis with undermined ulcer and abscess formation of the cecum. Ameboma can be found in developed countries, particularly in patients with risk factors and a history of traveling to areas with the developing disease. Colonoscopy with biopsy is recommended for patients with suspected ameboma, and surgical intervention is likely indicated in complicated cases although the surgical mortality rate is high.

1. Introduction

Amebiasis is caused by the protozoal organism *Entamoeba histolytica* infection. It is commonly found in developing countries but rare in developed areas. However, the incidence of this disease in developed countries is increasing, arising from travelers in highly epidemic area or immigration and immunocompromised populations.[1–3] Some patients who are malnourished, infant, elderly, pregnant, receiving glucocorticoids, diabetes, or suffering from alcoholism have an increased risk of fulminant disease of amebiasis.[1,4]

Amebiasis is a multifaceted disease which may present with inflammation ranging from acute to chronic, and symptoms from asymptomatic to abscess.[5] Up to 90% of those patients diagnosed with amebiasis are asymptomatic, and the most common symptom is amebic colitis.[6,7] The primary site of *Entamoeba histolytica* infection is in the colon but may extend to other organs via hematogenous spread to cause liver abscess.[8] The toxin of *Entamoeba histolytica* presents in the microfilament of the colon and causes mucosal defect associated with parasite invasion to the nutrient arterioles of the colon. This results in arteriole occlusion and ischemia of the bowel wall, where the bowel wall may progress from the initial superficial ulceration to transmural necrosis and perforation.[5]

In this study, we presented a case which combined amebiasis and nasopharyngeal carcinoma under treatment. In this patient, however, the developed ameboma was confused with a preliminary diagnosis of malignancy.

2. Case report

A 39-year-old female presented to our facility who was diagnosed with moderately differentiated nasopharyngeal squamous cell carcinoma, T3N1M0 stage III, who had completed one year of combined chemotherapy and radiotherapy. She reported intermittent dull abdominal pain with diarrhea after traveling to China's Hainan Province approximately 3 months ago. This time, she felt acute abdominal pain and progress in the last 3 days prior to

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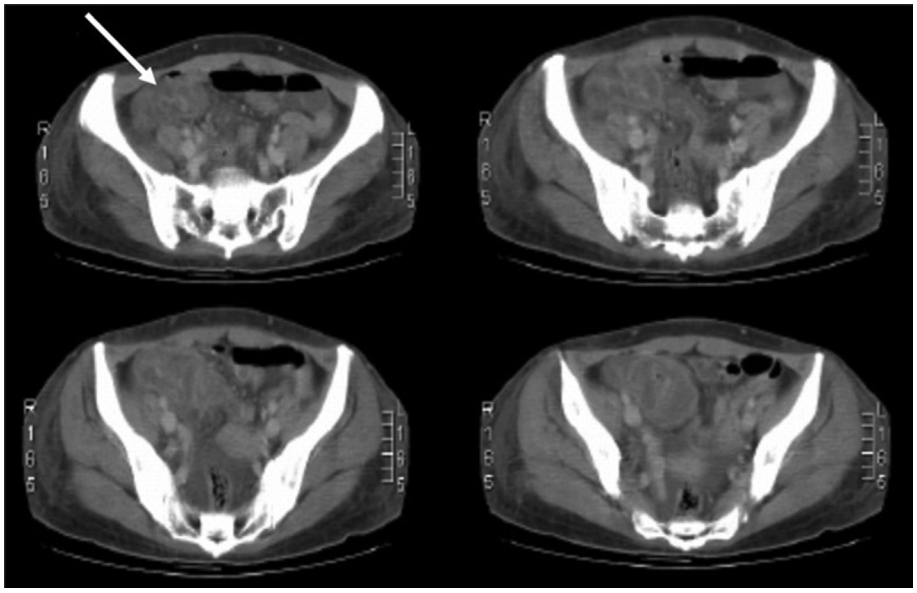

Fig. 1. Abdominal computed tomography showed cecal tumor (arrow) and intra-abdominal abscess.

admission. Physical examination of the patient revealed diffused peritoneal sign. Abdominal computed tomography revealed a cecal tumor and intra-abdominal abscess (Fig. 1). Exploratory laparotomy was undertaken and revealed infiltrating yellowish tumor about 7 cm over cecal with massive serous ascites over her whole abdomen, especially the pelvis. There was no significant cecal perforation. Right hemi-colectomy with end-to-end ileo-colic anastomosis was performed because of suspected cecal malignancy and intra-cecal abscess formation, but no protective stoma was done. We did not send the specimen for intra-operative frozen section diagnosis. Pathology reported ambeic colitis with an undermined ulcer and abcess formation (ameboma) of the cecum. Microscopic review found numerous typical amebic trophozoites (Fig. 2). The post-operative hemodynamic was noted to be stable, with a persistent high fever and even empiric antibiotics for intra-abdominal abscess. There was no evidence of anastomosis leakage. The patient died 7 days after operation due to sepsis.

3. Discussion

This patient presented with a rare case of ameboma and underwent a right hemicolectomy procedure. However, the patient

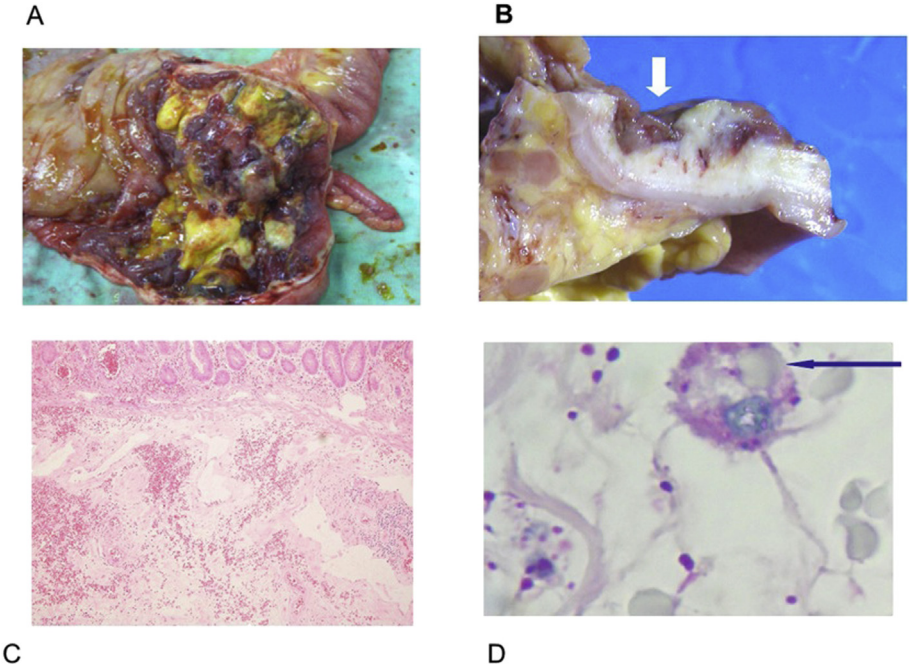

Fig. 2. (A) (B) Gross view of amebic colitis with undermined ulcer and abscess formation (ameboma) of the cecum. (C) Microscopic view of undermined (arrow head) ulcer and abscess formation. (D) High power field view of amebic trophozoites (arrow head, hematoxylin and eosin, x400).

did not survive the surgical intervention and post-operative period due to severe sepsis. The primary reason that treatment failed was due to delayed diagnosis and treatment. At the time of surgery, the patient manifested peritonitis and sepsis, which caused multiple-organ failure during the post-operative period. In addition, we did not begin to administer antibiotics such as metronidazole for amebona on a monthly basis, 3 times daily for 7–10 days, until the pathologic report confirmation. The poor condition of the patient was irreversible, and lead to her to mortality. Delayed admission to hospital was also the main reason leading to mortality in a previous report.[8]

Ameboma is an inflammatory mass which consists of granulation tissue and peripheral fibrosis, and may be confused with malignancy in the cecum and ascending colon.[1,9,10] Typically, ameboma occurs in untreated or inadequately treated patients,[11] with an incidence of about 1.5% out of all amebiasis patients.[12,13] Ameboma are usually found in a solitary mass and vary in size.[11] The common complications of ameboma are perforation, obstruction, intussusception, fistula, and appendicitis.[1] There was no direct relationship between ameboma and NPC, but NPC with immunodeficiency is a risk factor for amebiasis. However, the invasive form of *Entamoeba* can also infect normal populations.[8]

In general, most patients with amebiasis just receive medical treatment, and surgical intervention is only indicated for cases with suspected bowel perforation, peritonitis, local abscess, obstruction, diagnosis uncertainty, toxic megacolon, or ameboma.[7,11,13] The medical treatment for noninvasive infections is paromomycin. Nitroimidazoles, especially metronidazole, are given for invasive amebiasis. Approximately 90 percent of patients with amebiasis have a response to nitroimidazole therapy. In some cases of fulminant amebic colitis, it is necessary to add broad-spectrum antibiotics for intestinal bacteria spilling into the peritoneum.[10] Overall, the surgical mortality of all amebiasis patients ranged from 32 to 83%.[14–16] The surgical methods employed included resection with or without exteriorization, perileal antegrade colonic lavage, and wide drainage with fecal diversion without resection.[8] However, another problem is that the preoperative diagnosis of ameboma was found to be as low as 13–50% in a previous study.[8]

Pathologic examination of colonoscopic biopsy is the only method to more reliably make the diagnosis of intestinal amebiasis.[1,13,17] However, the necessary biopsy target area can be difficult to approach, or the condition of the patient may not be suitable. One less invasive method used to diagnose amebiasis is antibody measurements, even if the antibody may be available and positive for years. Another method is microscopic examination of a collected stool specimen. But that method is substantially less sensitive and cannot differentiate between the species of *Entamoeba*.[18]

In conclusion, ameboma can be found in developed countries, especially in patients with risk factors and a history of traveling to developing areas. Patients with suspected disease are recommended to undergo a colonoscopy with biopsy, and surgical intervention is indicated if there are complications, although the surgical mortality rate is high. Delayed diagnosis and treatment is the most frequent cause of mortality. Therefore, we should alert fellow clinicians, other medical professionals and patients about potentially improved outcomes when diagnosis, early treatment, and limited surgery are undertaken in these patients.

Conflict of interest

All authors declare that they have no conflicts of interest.

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